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ECONOMIC INCENTIVES FOR LAND USE CONTROL

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## FOREWORD

The basic premise of land use controls is to reduce the effect of noncompensated, negative externalities that one land owner might inflict on others. Individuals in an effort to avoid the negative externalities that might be inflicted on them, have established various property rights and legal restrictions through the political process. These rights and restrictions have developed to promote economic efficiency and equity. Questions arise, however, as to the relative economic efficiency and equity of traditional proscriptive land use controls and to the potential economic effects of using controls based on economic incentives. This report primarily reviews and addresses these questions from a theoretical economics viewpoint.

This report was purposely directed towards theoretical aspects in order to form a solid base for further land use management and implementation strategies research. The conclusions of this theoretical research help to establish reasonable bounds on the types of land use management strategies that may economically internalize land use externalities.

The Environmental Management program of the Office of Air, Land and Water Use is directed toward improving the capabilities of state, regional, and local governments for instituting and managing environmental programs. It does this by providing them with improved information and methods for identifying and describing alternative solutions to specific environmental problems and for selecting and implementing the best solution.

The program considers four fundamental functions performed by public administrators: planning, evaluation, implementation, and enforcement. It emphasizes intermedia and secondary effects of environmental management actions, implementation incentives and institutional arrangements, and consideration of the complete range of implementation measures, and public education programs, as well as the traditional regulatory mechanisms.

## ABSTRACT

This report performs a theoretical economic analysis of the incentives embodied within a variety of existing and proposed land use control techniques and, then, employs this analytical framework to examine the social desirability of supplementing or replacing the existing body of land use control mechanisms with any of several innovative policies for the regulation of the use of land. Thus, this report first investigates the economic and legal relationships between alternative assignments of property rights in the use of resources and the levels of external effects attributable to the use of these resources. Then, the administrative, legal, economic, and political limitations of the traditional land use control mechanisms of municipal zoning, subdivision regulation building codes, and eminent domain condemnation are examined. Next, a set of basic concepts is developed for the evaluation of the potential economic efficiency and social desirability of any mechanism for the optimal control of external effects or the optimal provision of public facilities. Finally, using these concepts, the potential economic efficiency, legal feasibility, administrative tractability, political acceptability, and social desirability of implementing several innovative and, as yet, relatively untried land use control mechanisms are assessed.

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## 1.0 INTRODUCTION AND EXECUTIVE SUMMARY

If the characteristics of the market for real property were in complete conformity with the assumptions of perfect competition, there would exist no economic justification for the imposition of land use controls upon this market. Rather, it could reasonably be expected that the unregulated market would function in such a manner that an economically efficient pattern of development would be achieved.

Moreover, in many ways the market for real property is described satisfactorily by the assumptions of perfect competition. In general, the market embraces a large number of independent buyers and sellers, none of whom exerts any substantial control over market prices. Reasonably accurate information concerning the availability and asking prices of properties is readily available from real estate agents and classified advertisements. Finally, entry into and exit from the market is reasonably free, although transaction costs may be significant in many instances.

However, even when property is undeveloped it is not perfectly homogeneous; and after development its heterogeneity becomes even more pronounced. In addition, the real property market is subject to a high degree of interdependence. There exist among various types of land uses certain uncompensated externalities (e.g., air and water pollution, noise, congestion, aesthetic conflicts) which prevent the unrestricted market from achieving economic efficiency. Similarly, interdependencies exist between the economically efficient development of private property and the economically efficient provision of public facilities (e.g., water, sewerage, streets and highways) to serve private land use activities.

Consequently, the political process has intervened in the market for real property both to protect property owners against the potential erosion of their wealth and to promote economic efficiency in the provision of public facilities. Historically, this political intervention has consisted of the enactment and implementation of such mechanisms as municipal zoning processes, subdivision regulations, building codes, and eminent domain condemnation procedures.

Undeniably, these land use controls have had substantial impacts upon the patterns of development of real property which have been attained throughout the nation. However, because these controls have

incorporated numerous unintended economic incentives, many of their impacts have, in many situations, been inconsistent with the attainment of economic efficiency.

To aid in understanding the rationality of the behavior patterns which have produced these unanticipated and, frequently, undesired impacts and to provide a conceptual basis for the establishment of improved land use controls to supplement or supplant the traditional mechanisms, this report develops a theoretical economic analysis of the incentives embodied in public regulatory policies. Then, taking into consideration the practical legal constraints which the existing body of legislation and judicial interpretations imposes upon the feasibility of implementing particular regulatory policies, the report applies this theoretical economic analysis to the evaluation of a variety of existing and proposed land use control mechanisms.

Specifically, Chapter 2.0 investigates the economic and legal relationships between the assignment of property rights in any situation and the nature and extent of the externalities which exist in that situation. This investigation demonstrates that:

- . The establishment of private property rights generally produces a greater internalization of externalities than is produced by the establishment of communal property rights because, somewhat paradoxically, private property rights encourage people to take greater account of social costs.
- . The market resolution of any externality situation will be both economically efficient and allocatively neutral with respect to the assignment of property rights if the income elasticity of demand is zero in all markets (including the market for the external effect) and if the costs of negotiating and enforcing transactions are zero.
- . In realistic externality situations, the attainment of the socially most desirable allocation of resources will not be independent of the assignment of property rights. Rather, because of equity considerations, differences in the objectives of the various individuals involved in the situation, differences in the availability of relevant information under alternative assignments

of property rights, differences in the number of individuals involved in different situations, the existence of substantial transaction costs, and differences in the transaction costs associated with alternative assignments of property rights, the social desirability of the market resolution of any realistic externality situation will be inextricably related to the assignment of property rights established in that situation.

- . There exists no single assignment of property rights which uniformly constitutes the socially most desirable assignment of property rights in all externality situations. The socially most desirable assignment of property rights for any particular externality situation can only be determined on the basis of a careful evaluation of the relative strengths and weaknesses of all feasible alternative assignments of property rights in that situation.
- . Neither the existing body of private nuisance law, as interpreted by the courts today, nor the prevailing judicial reconciliation of the inherent conflict between the police power of the state and the private citizen's right to just compensation for the confiscation of his property appropriately provides for the internalization of all externalities.
- . The legal remedy of totally prohibiting the production of an externality (i.e., injunctive relief) generally constitutes an inefficient resolution of an externality situation, since it is incapable of distinguishing between land uses which are able to pay their total social cost and land uses which are unable to pay this cost.

Next, Chapter 3.0 examines the administrative, economic, judicial, legal, and political problems which arise in the application of traditional land use control mechanisms. This examination, which focuses primarily upon municipal zoning processes and eminent domain procedures, demonstrates that:

- . Because of legal and judicial restrictions upon the application of municipal zoning controls in certain

situations, structural limitations upon the effectiveness of municipal zoning, administrative difficulties in the implementation of municipal zoning processes, undesirable political influences in municipal zoning processes, and unanticipated or unintended economic problems embodied in or arising from the application of municipal zoning controls, municipal zoning is incapable, in practice, of promoting the internalization of all externalities.

- . In numerous instances, the inequities and inefficiencies which result from the inappropriate application of municipal zoning controls are intensified by the simultaneous inappropriate application of complementary land use control techniques, such as subdivision regulations and building codes.
- . Prevailing legal and judicial restrictions upon both the range of application of the power of eminent domain and the procedures which must be employed in performing eminent domain condemnation cause the exercise of the power of eminent domain to be incapable of promoting the economically efficient provision of public facilities in all situations.
- . In addition, prevailing legal and judicial interpretations of the concept of just compensation, combined with the unavoidable reliance upon subjective judgment in the measurement of just compensation, causes the exercise of the power of eminent domain to impose severe inequities upon some individuals in some situations.
- . Despite the demonstrated weaknesses of municipal zoning processes, subdivision regulations, building codes, and eminent domain condemnation procedures as mechanisms for the regulation of real property, it cannot be concluded that any or all of these land use control techniques should be abolished, replaced, or modified. Before any of these conclusions can be reached, it must be demonstrated that, in the particular externality situation under consideration, the allocation of activities to parcels of land can be

performed more satisfactorily either by the unregulated market, by some other land use control mechanism, or by modified versions of the existing land use control techniques.

Chapter 4.0 identifies and describes the problems which arise in the attainment of economic efficiency and the achievement of the socially most desirable allocation of resources when externalities, public goods, or increasing returns to scale prevail in any particular market. In addition, analyses of the effectiveness of the various public policies which might be employed to resolve these problems of market failure in specific situations are performed. These analyses demonstrate that:

- . There exists no single mechanism for the internalization of externalities which uniformly constitutes the socially most desirable internalization mechanism in all externality situations. Rather, for any particular externality situation, the determination of the most appropriate internalization mechanism can only be performed on the basis of a careful examination of the relative strengths and weaknesses of all feasible alternative internalization mechanisms in that situation. Thus, in different externality situations, the socially most desirable internalization mechanisms might include the voluntarily negotiated resolution of the externality situation by all affected individuals, the imposition of unilateral or bilateral taxes or subsidies, the specification of minimum standards of acceptability, the establishment of markets for the exchange of rights to produce externalities, or the merger of affected resource owners into "natural" decision-making units.
- . Although charging a zero price for the consumption of a public good will promote the attainment of economic efficiency in the consumption of the good, the adoption of this policy will preclude the attainment of economic efficiency in the production of that good, in particular, and all goods and services, in general. Conversely, although charging a positive price for the consumption of a public good will necessarily restrain society from the attainment of economic efficiency in the consumption of goods and services,

the adoption of this policy will provide valuable information for the determination of the economically efficient rate of production of the good. Therefore, the evaluation of the social desirability of charging any particular price for the consumption of any public good should be based on a careful comparison of the costs and benefits which will be obtained by society if that pricing policy is adopted.

- Theoretically, to promote economic efficiency in the provision of a good produced under conditions of increasing returns to scale, the price of the good should be set equal to the marginal cost of producing the good and, then, the operating losses of the producer of the good should be financed through a system of lump sum taxes. However, in realistic situations, the unavailability of relevant information and the absence of appropriate taxation mechanisms may cause the charging of a price equal to the average cost of producing the good or the adoption of a multi-part pricing system to be socially more desirable than the theoretically optimal pricing and taxation mechanism. In each situation, it is necessary to compare the relative advantages and disadvantages of all potentially applicable policies before selecting any specific policy for implementation.
- Although there exists no single public policy which is uniformly socially most desirable for the control of any of the preceding types of market failure, there does exist a single analytical framework which is universally appropriate for the comparison of the strengths and weaknesses of alternative policies -- the analytical framework of cost-benefit analysis.

Finally, Chapter 5.0 investigates the possibility that some alternative regulatory policies might be capable of producing patterns of development which are socially more desirable than the patterns of development which are produced by the traditional regulatory mechanisms of municipal zoning, subdivision regulation, building codes, and eminent domain condemnation. Specifically, for each of seven innovative and, as yet, relative untried regulatory policies, this investigation examines the information requirements and information retrieval

considerations associated with the policy; the potential inequities, abuses, and enforcement problems which are likely to arise with the policy; the legal constraints and political considerations which might limit the applicability of the policy; the expected impact of the policy on land use patterns; the extent to which the policy promotes the attainment of the socially most desirable pattern of development; and the most appropriate level of government to implement the policy. The policies which are examined include: a policy of ad valorem property taxation with tax rates conditional upon land use, a policy requiring the payment of annual "externality" fees to the government by the owners of property upon which external effects are generated, a policy providing for the transfer of a lump-sum payment for externalities whenever the permissible land use status of any property is changed; a policy of convening public hearings to promote negotiated settlements of externality problems among all individuals who are affected by these problems; a policy of purchasing scenic or environmental easements; a policy encouraging the formation of landowner development corporations; and a policy requiring the owners of new developments to pay the full additional cost of all expansions of public facilities which must be provided to serve these new developments. Relative to these policies, the investigation demonstrates that:

- . The implementation of a policy of ad valorem property taxation with tax rates conditional upon land use generally will be socially undesirable because any realistic policy of this type can be expected in many instances to provide perverse incentives to property owners and, consequently, in most situations to produce patterns of development which are less satisfactory than the patterns of development which would have been produced by alternative policies.
- . It generally will be socially undesirable to implement a policy requiring the transfer of lump-sum payments for externalities prior to changes in the permissible land use status of properties because of the extreme volume of information required for the formulation of a policy of this type, the substantial practical and theoretical difficulty associated with assembling this body of information, and the limited opportunity to adjust the structure of payments embodied in this policies in response to initial errors in the specification of payments or changes in the characteristics of externality situations.



- Public hearings involving all individuals who are affected by particular externalities are likely to be successful in promoting negotiated settlements of these externality problems only in situations which involve only a small number of individuals -- situations in which private negotiations are also reasonably likely to produce mutually agreeable settlements without governmental intervention. However, in externality situations involving large numbers of individuals, it is extremely likely either that no negotiated settlement will be attained or, if less than the unanimous consent of all affected individuals is required for the adoption of a settlement, that the pattern of development which is attained will be less socially desirable than the patterns of development which would have been produced by alternative policies.
- The adoption of a policy encouraging the formation of landowner development corporations will virtually inevitably be socially undesirable because the formation of a landowner development corporation which is sufficiently comprehensive to control effectively the externalities which arise among private land uses in a geographic area necessarily will provide to the shareholders of this corporation substantial monopoly control over the development and use of land in this area. Regulation of the corporation's exploitation of this monopoly power will be at least as difficult as the direct regulation of the externality situation using an alternative control policy.
- Both the imposition of annual "externality" fees and the public purchase of scenic and environmental easements offer sufficient flexibility in their tax and subsidy structures at any point in time and sufficient adaptability of these structures over time to present the possibility that the implementation of these policies will produce increases in the social desirability of the pattern of development in a geographic area which are large enough to justify incurring the costs of developing and implementing these policies.

- A policy which attempts to require the owners of new developments to pay the full additional cost of all expansions of public facilities which must be provided to serve their developments should cause these property owners to bear a sufficiently larger portion of this full additional cost than they bear under the prevailing methods of financing the provision of expansions of public facilities to produce an improvement in the pattern of development in a geographic area which is sufficiently great to justify incurring the costs of formulating and implementing this pricing policy.

Nevertheless, before any unqualified recommendation can be advanced concerning the social desirability of adopting any of these policies, additional research must be performed to evaluate the precise administrative requirements, political acceptability, and information processing needs of each of the policies.

Chapter 6.0 contains an extensive bibliography of the literature relevant to the issues addressed in this report.